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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,863	05/08/2000	ULRICH BENZLER	10191/1227	5597

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EXAMINER	
AN, SHAWN S	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/462,863	BENZLER ET AL.	
	Examiner	Art Unit	
	Shawn S. An	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 6-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 6-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Remarks

1. Applicant's arguments with respect to claims 6-12 as filed on 6/07/05 have been carefully considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 6-7, 9-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZIEGLER (Corporate Rearch & Development) in view of Borer (6,069,670) and Yamashita et al (5,347,599).

Regarding claims 6-7, ZIEGLER discloses a method for generating an image when estimating a motion of image sequences, the method comprising the steps of:

determining a first motion vector with a pixel accuracy (Fig. 5, 1);

determining a second motion vector with a sub-pixel accuracy (2), wherein a resolution being selected to be higher (refined accuracy) than a resolution of a pixel raster in the first search;

determining a third motion vector by a further interpolation (3), wherein the resolution is increased once more, and the interpolation is carried out on the basis of a pixel raster.

ZIEGLER does not specifically disclose utilizing aliasing reducing interpolation filtering, and more than four neighboring pixels being utilized for an interpolation of each pixel.

However, Borer teaches motion vector detecting method comprising aliasing reducing interpolation filtering (col. 4, lines 8-25), and Yamashita et al teaches an adaptive interpolation method comprising a concept wherein more than four neighboring pixels being utilized for an interpolation of each pixel (col. 4, lines 33-49).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for generating an image when estimating a motion of image sequences as taught by ZIEGLER to incorporate the concepts as discussed above as taught by Borer and Yamashita et al so as to reduce the unwanted aliasing by utilizing the Borer's interpolation filter, and to utilize more than four neighboring pixels for an interpolation of each pixel, thereby preventing image deterioration and improving interpolation performance near vertical and horizontal directions.

Regarding claims 9 and 10, the Examiner takes official notice that FIR filter is well known in the art, including mathematics, for estimating a value of a particular pixel at a certain frame. Therefore, it is considered a design choice by an user to use filter coefficients such as 0, ½, -43/256, 23/256, or -8/256 in order to have a better results, such as reducing the aliasing effect.

Regarding claim 12, the Examiner takes official notice that a conventional encoder comprises of encoding (inter frame) of a motion vector for transmission, and a range of values of motion vector difference (motion estimation/compensation) to be coded to an increased/decreased resolution depending on the application, practical usage, and available bandwidth.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for generating an image when estimating a motion of image sequences as taught by ZIEGLER to encode the motion vectors including motion vector differences for increased/decreased resolution depending on the application, practical usage, and available bandwidth.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over ZIEGLER, Borer, and Yamashita et al as applied to claim 6 above, and further in view of Nakaya et al (5,684,538).

Regarding claim 8, the combination of ZIEGLER, Borer, and Yamashita et al does not particularly disclose more neighboring pixels being utilized for a bilinear interpolation.

However, Nakaya et al teaches utilizing bilinear interpolation as an interpolation process using four pixels around the interpolation point (col. 2, lines 41-47).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for generating an image when estimating a motion of image sequences as taught by ZIEGLER to incorporate the concept as taught by the Nakaya et al so that more neighboring pixels are utilized for a bilinear interpolation, thereby preventing image deterioration and improving interpolation performance near vertical and horizontal directions.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over ZIEGLER, Borer, and Yamashita et al as applied to claim 6 above, and further in view of Eifrig et al (5,991,447).

Regarding claim 11, the combination of ZIEGLER, Thomas, and Yamashita et al does not particularly disclose predicting video objects separately, and inserting coefficients into a transmission bit stream at a beginning.

However, Eifrig et al teaches predicting video objects separately (Abs.), and inserting coefficients into a transmission bit stream (140) at a beginning in order to achieve efficient coding, object scalability, spatial and temporal scalability, and less error.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for generating an image when estimating a motion of image sequences as taught by ZIEGLER to incorporate the well known concept of predicting video objects separately, and inserting coefficients into a transmission bit stream at a beginning as taught by Eifrig et al in order to achieve efficient coding, object scalability, spatial and temporal scalability, and less error.

Conclusion

6. The prior art made of record is considered pertinent to Applicant's disclosure.

A) Kim et al (5,541,660), Systolic realization of motion compensated interpolation filter.

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S. An* whose telephone number is 571-272-7324.

8. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Please note the new fax number.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHAWN AN
PRIMARY EXAMINER

9/14/05